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ABSTRACT

Electric machines operating according to the reluctance principle have toothed air gap surfaces between their moving and fixed parts. The magnetizability of these teeth directly affects the performance of the machine. According to the invention, the teeth projecting into the air gap consist of a material which in relation to the remaining soft-magnetic body presents better magnetizability and/or greater magnetic saturation flux density. This material is preferably a grain-oriented electric steel sheet or a cobalt/iron alloy. Alternatively or in addition thereto, the soft-magnetic body in which the conductor coils are positioned can be made entirely of a grain-oriented material by appropriate segmentation. In this case, every other pole is non-spooled and consists of two halves separated by a non-magnetic holding element. The use of steel sheets rolled at an angle also contributes to the improved utilization of space and material in rotating machines, especially in transverse flux machines. The characteristics of the construction provided for in the invention result in the production of little cutting waste and thus raise the performance of electric machines with soft-magnetic teeth at the air gap surface and reduce losses.